



New Research Projects for FY 2007:

The biennial SPR Research Program was recently revised to include projects selected at the NH Research Advisory Council meeting on April 18.

Improving the Drying Time of Traffic Paint

The purpose of this study is to determine if heaters or blowers are a practical and efficient method for drying wet paint lines on the roadway. The placement of cones to protect wet paint is a problem due to safety issues and the number of personnel required.



The project could result in changes to work methods, reduced hazards to workers, and reduced claims for paint damage to vehicles.

Flood Flow Frequency of NH Streams

Flood-flow frequency information is currently obtained from historical data collected at USGS stream gauges. In many instances this data is not available and estimates are obtained through a technique called regionalization, which is susceptible to errors.

Accurate and up-to-date flood-flow frequency estimating methods are necessary for the safe and economical design of bridges, culverts and other structures. This project will provide the NHDOT with a quick, authoritative, and easy to use tool for obtaining flood-flow statistics for streams in the state at 2-year, 5-year, 10-year, 25-year, 50-year, and 500-year intervals. The project will also provide an automated GIS-based tool for estimating flood flows on any stream in N.H.

RWIS System Validation and Assessment

New Hampshire will have 12

fully functioning RWIS (Road Weather Information System) stations for the 2006-07 winter maintenance season.

This project is an evaluation to:

- Verify that all sensors are correctly indicating the actual conditions and providing correct data.
- Assess the value of site-specific forecasting and the system's impact on winter maintenance activities.

Performance of Warm Mix Asphalt

Warm mix technology allows for the reduction of mixing and compaction temperatures, which results in reduced emissions, energy costs, and aging of the binder. It may also allow for longer haul distances, cool weather paving, and easier compaction. Zeolite and sasobit are two technologies that will be studied. A MMLS3 (Model

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Completed Research!

Development and Implementation of Interactive Storm Water Models:

You'll have some trouble picking up this report! The project "deliverable" is the second-generation "stormwater table", used by the Bureaus of Environment and Highway Maintenance to demonstrate the problems of non-point source pollution. The working model allows participants to flow water through culverts and ponds to see the effects of best management practices to control erosion and pollution. The project was completed just in time for the maintenance districts to display the table at their fair booths. It is a loose depiction of the I-89 Exit 16 area, home of Maintenance District 2. The tables will also make appearances at schools and other events around the State.



New Research

*Curiosity
will conquer
fear even
more than
bravery will.*

*- James
Stephens*

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Mobile Load Simulator) is proposed for use to evaluate performance, both in the lab and at the test section.

In-Service Performance Monitoring of a CFRP Reinforced HPC Bridge Deck

The Rollins Road bridge over the B&M Railroad and Main Street in Rollinsford was reinforced with carbon fiber reinforced polymers (CFRP) and opened to traffic in December 2000. Strain data has been collected since that time from sensors that were installed during construction. No analysis has been done using this data since 2002. This project will use the collected data to conduct performance monitoring of the high-performance concrete (HPC). The sensor data will be evaluated based on its value in a long-term structural monitoring program.

On-board Vehicle Sensors for High-Resolution Weather and Road Conditions

A component of an Intelligent Transportation System (ITS) is the Vehicle Infrastructure Initiative in which vehicles have on-board equipment used to sense weather conditions, as well as the conditions at the tire-road interface. RVIS stations provide an excellent grid of weather information, and the mobile sensing in vehicles will yield real-time and high spatial resolution information. This is a "proof of concept" project.

Spring Thaw Predictor and Real-Time Spring Load Restriction Methodology

NHDOT must protect its infrastructure and minimize maintenance, but allow commerce during the six to eight week period of spring thaw and the recovery period.

This project will use frost tubes, weather stations, and road deflection measurements

On the road again...

If you have visited the New Hampshire's agricultural fairs, you may have seen some of the research posters and trading cards featured at the Materials & Research Bureau Showcase last January. The items were used at the NHDOT booths manned by District staff at the Haverhill, Lancaster, Hopkinton and Deerfield Fairs to let the public see some of the great things the Department is doing. Thanks for the exposure guys!

Stretching the buck

Former Highway Maintenance Engineer Steve Gray is heading an initiative to use chip seal surface treatments to preserve our highways. Four chip seal methods are being tried on about a mile of road in each District to give them some first-hand experience with these products, which generally cost less than a thin hot mix asphalt overlay. Product application began in early September. The M&R Pavement Management and Research Sections will assist in documenting performance.

to better define real time conditions at specific locations. This two-year project will be used to develop more accurate guidelines for applying and lifting load restrictions, which will result in shortening the road weight restriction time.

Road strength changes with changing frost and thaw depths will also be defined.

Airport Preservation Study at Hampton Airport

Hampton Airfield has been in operation since 1946 and is one of nine privately owned NH airports that are open to the public. These nine airports, and another four publicly owned airports, do not receive funding assistance from the Federal Aviation Administration. They struggle to keep their facilities safe and viable into the future. They provide essential landing areas for many types of aircraft serving a variety of needs including emergency rescue, fire spotting, aerial surveys, tissue/organ transport, transportation of critically ill patients, recreational flights, flight training, and aviation fuel supplies.

The goal of the project is to demonstrate the airport's value to the community and encourage support for its survival in the Town's growth

and development plans. The project will investigate:

- Accessibility opportunities.
- Airport preservation



suggestions.

- Economic benefits to the community.
- Capital-improvement and safety needs.
- Airport layout plan of future full-build conditions.
- Opportunities for community or local/regional government coordination.

Handy Conversions

Ratio of an igloo's circumference to its diameter: Eskimo Pi
2000 lbs. of Chinese soup: Won ton
Basic unit of laryngitis: I hoarsepower
16.5 feet in the Twilight Zone: I Rod Serling
1000 aches: I megahurtz
2000 mockingbirds: 2 kilomockingbirds